Patiharn Liangkobkit

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EDUCATION

King Mongkut's University of Technology Thonburi (KMUTT)
BE in Computer Engineering-Current **GPA 3.72** | Duolingo English Test: **125** overall | Aug 2023-Present
Activities: Black Pearl Formula Racing Team

University of Toronto, Canada (UofT)
Government of Canada - [$10200] **ASEAN Scholarships** and Educational Exchanges (**SEED**) | Sep 2025-Dec 2025 (1 Semester)
Activities: UTMIST, IEEE, Power 2 Change, Bridges

Bangkok Christian College - Graduated GPA 3.85 | May 2011-March 2023
South Side High School, Jackson TN, United States of America - 11th Grade Exchange Program | July 2021-July 2022 (1 year)

PROJECTS

ModchelinGuide | Ranking and Suggestion System for Restaurants in a Selected Area (2025)
Our model: https://huggingface.co/wttw/modchelin_thainer-base-model
Report: https://drive.google.com/file/d/1ERQLBEdTEedgWhTgonwhfvciRrVBrICc/view?usp=sharing
- 7 People group work creating a website that ranks restaurant in a selected area to guide restaurant owners which kind of restaurants are in demand in the selected area. I am responsible for **Named Entity Recognition (NER)** model
- Preprocessing: Started by data collecting with **Google Maps APIs** and **Web Scraping** (Playwright). **Data Augmentation** by translating Thai to English, English to well arranged English, then well arranged English to Thai. **Data Cleaning**.
- Exploratory Data Analysis (EDA): **Topic Modeling** with **BERTopic** and **fine-tuning** a **Named Entity Recognition (NER)** Model by creating **BIO-tag** to create a letter to represents each word: if a word of a category has its **cosine similarity** higher than the threshold 0.5 (50%), it will be tagged with its category's letter representation. If below it will be tagged "O".
- We selected **WangchanBERTa** model to fine-tune with our dataset (BIO-Tagged). Then used the fine-tuned model to find important aspects to do **Aspect-Based Sentiment Analysis (ABSA)** on reviews
- We got Aggregated Metrics (per restaurant, per aspect), then we did Feature Selection and trained our model. We get token-level accuracy reaching approximately **89.9%**

Activity Planner | LLM Family Activity Search (2025)
Report: https://drive.google.com/file/d/1kHg4NBEk-ub2j2PPAhl9y_8Unj9beT3T/view?usp=sharing
- Integrated **Sentence-BERT** embeddings for semantic understanding, then Calculates connections between search queries, group members, and activities. Combines **BM25** keyword search with dense semantic search. Considers ages, preferences, and group size
- Trained a new Neural Network Classifier in **Python** by: retrieving dataset on the internet from **423** websites, **feature selection** to ensure that our model is trained with important data including: *Title*, *age_min*, *age_max*, *duration*, and *how_to_play*, then, as the dataset has different amount of data regarding age differentiation we use **SMOTE** to create fair amount of data in each age, then we train and do **hyperparameter tuning**. The result of our model on 70 new samples is **72.86% accuracy** vs baseline 58.57% (**+14.29pp**).
- note: in the future the dataset could be expand and we can get better accuracy models.

EUREKA! | Search Engine (2025)
Github: https://github.com/Richyboy170/ECE326-Labs
- EUREKA! is a Google-inspired search engine that crawls web pages using **Web Crawler**, indexes content, ranks results using the **PageRank algorithm**, and provides a clean search interface for users to find relevant documents. For the sake of deployment, One-Click AWS Deployment with automated scripts is also created
- This is a 2-person work which has Backend and Frontend. I worked as a Backend on this project who has the responsibility to write and deploy the scripts on **AWS environments**.
  - **AWS deployment** on EC2
  - **SQLite database** for persistent data storage
  - **Google OAuth** 2.0 authentication for user login/logout

English New Words | Website for English Vocabulary Training (2024)
Website Link: englishnewwords.vercel.app
- Integrating **Next.js**, **Typescript**, and **Tailwind CSS** in practical cases to make English vocabulary easy-to-learn website
- has a steady number of **25+** users from different countries: United States of America, Canada, United Kingdom, Thailand, Sweden

Your Store | Website for Store Showcase (2025)
Website Link: https://your-store-example-by-patiharn.vercel.app/
- Focus on **Full-stack** development
- Frontend: **React** 19, **Next.js** 16, **Tailwind CSS** 4, Backend: **Prisma**, Database: **SQLite**

CrazyFabric | Website for T-Shirt Showcase (2024)
Website Link: crazyfabric-websitex.vercel.app
- Focus on designing method through **Figma**
- Integrating **Next.js**, **Typescript**, and **Tailwind CSS** in practical cases

EXPERIENCE

Anthropic AI Hackathon | Office Fresh (2025)
Organizer: *Anthropic and UTMIST*
- *Office Fresh* is an AI-driven wellness application designed for office workers, students, and remote professionals who spend long hours sitting to prevent Burnout, Eye strain, Wrist pain, Neck & back pain, Mental fatigue, and Poor posture (office syndrome)
  - Frontend - **React.js**, **Tailwind CSS**, Redux Toolkit
  - AI Models - **Claude** → Emotional support chat, **Gemini Vision** → Pose detection, **Google Cloud Vision API** → Image understanding
  - Backend & Services - Node.js, Google Cloud Functions, Firebase, **Gemini API**, **Anthropic Claude API**

Cyber Warrior Hackathon 2025 | Crypto Tracker (2025)
Top 10 : 10000 THB
Organizer: *Cyber Crime Investigation Bureau (CCIB), King Mongkut's University of Technology Thonburi*
- Our team of 5 developed Tron Cryptocurrency tracking desktop application to track scammer's transaction of cryptocurrency using **Python** and **TronGrid API**

Hackathon & Pitching E-SAN Thailand PMU-B Coding & AI Academy Season 2 | Crosswalk Safety (2025)
Social Impact Award: 3000 THB + **Gold Level** Certificate
Organizer: *PMU-B, Khon Kaen University*
- Team awards. Our team of 3 developed an innovative crosswalk safety application using **Python** and **YOLOv13**

Comcamp35 | Teacher Assistant (2024)
- hosting an activity for **30+** students in Website Design class on **HTML**, **Tailwind CSS**, **JavaScript**, and **React**

INNO-X Innovation Exchange KMUTT | Teacher Assistant (2023-2025)
- Assisted **50+** foreign students and domestic students to understand how to use tools in INNO-X laboratory room to practice communication and collaborative skills
- Tools included are BambuLab series P1S(3D printer), UltiMaker S7(3D printer), Lasercut, and mini CNC

Black Pearl Formula Racing Team | Member (2024)
- Contributed as a team member in suspension part, gaining hands-on experience in teamwork, collaboration, and technical club activities.

COURSES & TRAININGS

Relevant Coursework:
University of Toronto - Machine Learning, Applied Fundamentals of Deep Learning, Programming Language(Adv. Python and search engine)
King Mongkut's University of Technology Thonburi - Data Models (A), Linear Algebra (A), Statistics for Engineers

Talks and Trainings:
University of Toronto - Google X UTMIST: AI Workshop (**Gemini CLI**, Jules, **Antigravity**, ADK visual builder mode),
AUTORULE: Reasoning Chain-of-thought Extracted Rule-based Rewards Improve Preference Learning,
Recommendation Systems: How Netflix Knows What You'll Watch Next, The Intelligent Search Company - The Evolution of Search, **Responsible AI** 101, IEEE - Edge AI Workshop(**AI Visualization**), Building Applications with the **Claude API**.
King Mongkut's University of Technology Thonburi - The Future of Marketing the Power of **Generative AI**, ACA **Cloud Computing** Training and Exam Preparation Program, Angel Secret "**Project Management**", **Personas** in Action: Your Key to Effective Problem Solving, Entrepreneurial Mindset: Keys to Startup Success
Personal Trainings - Advanced: **Generative AI** for Developers (Google), **LLM Course** (HuggingFace), **React** Foundation (Vercel), Learn Next.js. (Vercel)

SKILLS

Programming: Python(Pytorch, SKLearn, NumPy, Pandas, Matplotlib, Soup, BERT, API(GPT-API, Claude-API, etc)), C, TypeScript, JavaScript, Tailwind CSS, CSS, SQL, Assembly, Verilog, Git, Linux

Other: AWS, Github, HuggingFace, Figma, Godot, VScode, Antigravity, Docker, Canva, Adobe Illustrator, Adobe Premiere Pro